L 48842-65 EWT(1)/EWA(j)/EWA(b)-2 RO

ACCESSION NR: AP5015142 UR/0063/64/009/005/0546/0554

15
B

AUTHOR: Bezuglyy, S. F. (Candidate of chemical sciences)

TITLE: Methods of investigating pesticide preparations

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 9, no. 5, 1964, 546-554

TOPIC TAGS: pesticide, physical chemistry

Abstract: The article discusses the physicomechanical characteristics considered in the development of methods of preparing pesticide preparations and in the evaluation of the quality of the preparations produced. To have maximum effect, pesticide preparations should not only be toxic, but also dispersable. The effectiveness of pesticides also depends to a great degree on their retention on various surfaces. In addition, preparations should readily form stable suspensions and emulsions in water of any hardness, and industrial preparations should contain the maximum possible amount of the pesticide. They should be nontoxic for plants, while the fillers, solvents, and surfactants used for their preparation should not interact chemically with them. The quality of

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pesticide preparations is determined not only by their biological activity, but also by physicochemical characteristics: wetability, retainability, particle size, stability of aqueous suspensions and emulsions, stability upon storage, etc.

ASSOCIATION: none

SUBMITTED: 00 ENCL: 00 SUB CODE: GC, IS

NO REF SOV: 029 OTHER: 028 JPRS

Card 2/2

L 50514-65 EWT(1)/EWA(j)/EWA(b)-2 RO

ACCESSION NR: AP5011982 UR/0348/65/000/003/0009/0011

15
14
13

AUTHOR: Bezuglyy, S. (Candidate of chemical sciences)

TITLE: The prospects of producing various forms of pesticides

SOURCE: Zashchita rasteniy ot vrediteley i bolezney, no. 3, 1965, 9-11

TOPIC TAGS: agriculture, pesticide

ABSTRACT: The effectiveness of a pesticide is related to the type of carrier preparation. Fine powders, wettable powders, concentrated emulsions, spontaneously emulsifying concentrates, solutions, aerosols, and penetrating preparations are applicable to different operations. The desired properties for all these preparations and for their active and inert components are explained. Wettable and water-dispersible powders are among the most promising of pesticides. They consist of toxins ground to 1-3 μ, mixed with fillers and with surface active substances. The grinding of powders to such fineness calls for the use of airstream mills with the air compressed to 7-8 atm and moving at supersonic velocities of 400-500 m/sec. The air streams being directed against or at an angle to one another cause fractionating of the particles which they carry. A typical mill consists of several components and achieves its results in several stages. Numerous preparations so produced or about to be produced in the SSSR are listed, giving their main

Card 1/3

ingredients and percent composition. The production of additional needed types is being delayed by the lack of proper equipment, while some types already on the market are inferior in quality due to the low purity of their ingredients. The interaction of the toxins with the fillers must be studied further to avoid rapid decomposition of the preparations. Fillers with the characteristics of high sorption, inertness, proper weight, ability to flow, abrasiveness, and hygroscopic properties must be used in these preparations. The present assortment of available substances is insufficient. The production of spontaneously emulsifying substances should be increased in the near future. The fine mist pesticides which do not call for the emulsifying agents and which may be dispersed by airplanes at 25 liters/hectare must be produced in larger quantities in the coming years. The production of high-purity mineral oil that can be substituted for transformer oil in the preparation used in controlling citrus fruit pests has been lagging and should be accelerated. The granulated preparations, several of which have been recently developed by S. M. Shogam, must be studied further. Other areas of investigation to be followed are: the chemical stability of preparations, selection of adhesive substances for fungicides, decrease of droplet evaporation in airplane spraying, development of water-oil emulsions, new fillers, new solvents, and new surface active substances.

IZMAYLOV, N.A.; BEZUGLYI, V.D.

Use of nonaqueous solvents in polarography. Trudy Komissii Anal. Khim., Akad. Nauk S.S.S.R., Otdel Khim. Nauk 4, 29-41 '52.
(CA 47 no.22:12045 '53)

IZMAYLOV, N. A., SHOSTENKO, Yu. V.,
BEZ'GLYY, D.

Caffeine

Separation of caffeine by the adsorption method.
Zhur. prikl. khim. 25, no. 5, May 1952

9. Monthly List of Russian Accessions, Library of Congress, August 1953, Uncl.

BEZUGLYY, V.D.

USSR

/ Quantitative determination of the organic acids, citric, oxalic, and gluconic, when found together. N. A. Izmailov and V. D. Bezuglyĭ (Sci. Research Chem.-Pharm. Inst., Kharkov). *Ukrain. Khim. Zhur.* 19, 675-8(1953).—These mixed acids, produced in a culture medium by *Aspergillus niger*, can be detd. rapidly as follows: For total acidity titrate the soln. potentiometrically with 0.1-0.2*N* alkali hydroxide with this circuit: Hg | Hg_2Cl_2 | satd. KCl | quinhydrone soln. | Pt. Next sep. citric and oxalic acids from the rest by pptn. with $Pb(OAc)_2$ and then remove the Pb by H_2S. Titrate the 2 acids with 0.1*N* alkali hydroxide potentiometrically with the quinhydrone electrode (or with phenolphthalein if H_2S is first removed), and subtract this value from the total acidity to give gluconic acid (this acid also can be detd. polarimetrically). Finally det. oxalic acid with the dropping Hg electrode, with *N* $Mg(OAc)_2$, adjusted to pH 8.25 with NMe_4OH, as the supporting electrolyte; $E = -1.02$. Subtract this from the oxalic-citric acidity to get the citric acid content. M. A.

BEZUGLYY, V. D.

USSR/Chemistry - Plastics

FD 180

Card 1/1

Author : Bezuglyy, V. D., and Braslavskaya, D. Ye.

Title : Production of polymethylmethacrylate emulsion powder with the use of a starch as a stabilizer

Periodical : Khim. prom. 3, 54-56 (182-184), April-May 1954

Abstract : Investigated the emulsion polymerization of methyl methacrylate from the standpoint of obtaining emulsion powders of various degrees of dispersion. Used starch as an emulsion stabilizer. Furthermore, investigated the influence of the grain size on the physical and mechanical properties of products made from a mixture of the emulsion powder and of the monomer. Illustrated by 2 figures. Data are listed in 3 tables. 2 USSR references are given.

BEZUGLYY, V.D.

USSR

Polarographic study of papaverine. V. D. Bezuglyi (Sci. Research Chem.-Pharm. Inst., Khar'kov). *Zhur. Obshchei Khim.* 24, 2191-5(1954).—Reduction of papaverine on the background of 0.02*M* Me_4NOH results in a polarographic curve with half-wave potential of 1.92-1.95 v. against a satd. calomel electrode. If the soln. contains EtOH, the curve is smoother. The method can be used for estn. of papaverine in mixts. contg. codeine (half-wave 2.01 v.). The Ilkovič equation gives $D = 0.2 \times 10^{-5}$ sq. cm./sec. for $n = 4$, which is close to the exptl. value. Thus the reduction requires 4 electrons, i.e. yielding the tetrahydro deriv. In a mixt. of papaverine and codeine in 10% EtOH the total wave height is detd. after which a run is made in 20% EtOH, wherein codeine does not show a polarographic wave.

G. M. Kosolapoff

BEZUGLYY, V.D.

3

Polarographic determination of naphthalene in return coke gas. V. D. Bezuglyĭ and N. D. Ogdanets. *Zhur. Priklad. Khim.* 28, 1339–44(1955).—The coke gas is passed through a scrubber with 80% H_2SO_4, then H_2O, then 40% NaOH, then H_2O, then a $CaCl_2$ tube, and finally through 2 xylene scrubbers. The 1st xylene scrubber retains $C_{10}H_8$. This soln. (1 ml.) is then mixed with 0.02*N* Bu_4NI in 50% EtOH (0.5 ml.) and 1.25 ml. EtOH. The soln. is purged with H_2 10–15 min. and is polarographed. For calcn. of $C_{10}H_8$ the method of addns. is used in which 0.1 ml. standard $C_{10}H_8$ soln. in xylene is added and a 2nd polarogram is run. The wave height is proportional to concn. up to 1×10^{-4} g./ml. At low concns. of $C_{10}H_8$ the above method is much more reliable than is the picrate method.

G. M. Kosolapoff

(1)

Ukrainskiy nauchno-issledovatel'skiy uglekhimicheskiy institut.

BEZUGLYY, V.D.

3094. Polarographic determination of naphthalene as 1-nitronaphthalene. V. D. Bezuglyĭ and N. D. Ogdanets. *Trudy Komiss. Anal. Khim., Akad. Nauk, SSSR*, 1956, 7 (10), 149–164; *Ref. Zhur., Khim.*, 1956, Abstr. No. 75,398.—Nitrate the naphthalene (0·0005 to 0·01 g) for 15 min. at 60° with 3 ml of HNO_3 (sp. gr. 1·33). An aliquot of the product is introduced into a soln. containing 0·2 *N* Na acetate in 50% methanol, hydrogen is passed and a polarogram obtained. In acid medium two waves are formed, with $E_{\frac{1}{2}}$ at 0·55 V and from −1·0 to −1·1 V with respect to an internal reference electrode. The second wave completely disappears in alkaline medium, but the height of the first remains constant in the pH range 2 to 13. The maxima in acid and alkaline media are suppressed by the addition of gelatin. With a naphthalene sample of 0·001 to 0·011 g, Ilkovic's equation is obeyed. When used for the determination of 0·000323 to 0·00088 g of naphthalene per litre in air, the error is ± 3·0%. C. D. Kopkin

BEZUGLYY, V. D. Cand Chem Sci --(diss) "Application of the polarographic method in the examination of medicinal preparations and intermediate products of the chemopharmaceutical industry." Mos, 1957. 21 pp 20 cm. (All-Union Sci Res Chem-Pharm Inst im S. Ordzhonikidze), 100 copies

(KL, 8-57, 108)

5

Bezuglyy, V. D.

AUTHORS: Dmitriyeva, V.N., Bezuglyy, V.D. 32-8-10/61

TITLE: Polarographic Determination of Hydroquinone in Methylmetacrylate. (Polyarograficheskoye opredeleniye gidrokhinona v metilmetakrilate)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 8, pp. 914-915 (USSR)

ABSTRACT Hydroquinone is often used as inhibitor in the polymerization of methylmetacrylate (in doses 0,1-0,001 %). The potential of the recovery of quinone in hydroquinone lies within the domain of positive values. Ammonium nitrate is used as base in the polarographic determination of hydroquinone, since it is well soluble in anhydrous solution. The polarography was here first performed in alcohol-water media in the base of a 2 % NH_4NO_3 solution with 2o% methylalcohol. The waves of the hydroquinone diffusion flux were distinctly to be seen on the polarograms. Then the polarography was carried out in the alcohol-ether medium and the base of the same electrolyte. In this case the hydroquinone wave showed a displacement toward the side of positive potential values and lay so close to the base wave that its measurement was made impossible. Then it was tried to determine the hydroquinone in methylmetacrylate by evaporation of the latter. The result showed an error of about 32% which is to be explained by the fact that the vapor partially took the hydroquinone with it. By prolonging the evaporation process a reduction of the error to 1o% was brought about; In the course of further investigations a practically useful combination of solvents

Card 1/2

Polarographic Determination of Hydroquinone in Methylmetacrylate

was found, namely: 4,5 volumes alcohol, 2,5 volumes water, and 3 volumes methylmetacrylate. The obtained polarographic curves on the NH_4NO_3 base yielded good measurement conditions. In order to avoid the acid-reaction influences, it is recommended here to use thoroughly crystallized NH_4NO_3 or to add red methyl or an alcohol solution of KOH for the purpose of reaching the desired reaction. There is 1 illustration, 1 table.

ASSOCIATION: Khar'kov Factory for Dental Products. (Kharkovskiy zavod zubovrachebnykh materialov)

AVAILABLE: Library of Congress.

Polarographic investigation of monomers of methacrylic esters

[illegible] polarographic half-wave potentials of Me and Et methacrylate in 20% MeOH and Bu and allyl methacrylate in 50% MeOH were 1.88 [illegible] resp. Increasing the pH from 4.18 to 8.57 shifts [illegible] and the diffusion current to more pos. values. These figures were used in the detn. of esters in their products of polymerization in a satd. soln. of Me_4NI in 50% MeOH. Adsorption of the monomers by the [illegible]

[illegible] was [illegible] the presence of [illegible]

[illegible] the [illegible] gave $CH_2:C(Me)COOR$ [illegible]

[illegible] the value of E½ was [illegible] whereas the acids of acrylic gave the same value as $CH_2:C(Me)COOH$. [illegible] in buffered solns., pH 6.5, 8.11, and 7.56, did not give polarographic waves. The reduction of the esters was represented by $CH_2:C(Me)COOR + 2H^+ + 2e \rightarrow MeCH_2:MeCOOR$.

L. Bregman

BEZUGLYY, V.D.

SHTURMAN, A.A., inzh.; BEZUGLYY, V.D., inzh.

Using self-hardening plastics for checking the precision of workpieces. Mashinostroitel' no.9:41-42 S '57. (MLRA 10:9)

1. Khar'kovskiy zavod zubovrachebnykh materialov.
(Machine-shop practice) (Plastics)

BEZUGLYY, V.D.

Plarography of alkaloids. Med.prom. 11 no.9:6-14 S '57. (MIRA 10:12)

1. Khar'kovskiy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut i Khar'kovskiy zavod zubovrachebnykh materialov.
(POLAROGRAPHY) (ALKALOIDS)

AUTHORS: Bezuglyy, V. D., Dmitriyeva, V. N. SOV/64-58-5-13/21

TITLE: Polarographic Determinations of Dibutylphthalate (Polyarograficheskoye opredeleniye dibutilftalata)

PERIODICAL: Khimicheskaya promyshlennost', 1958, Nr 5, pp. 312 - 314 (USSR)

ABSTRACT: The results are given for the above mentioned determinations in polymethylmethacrylate and in the mother liquors which are formed in the production of the latter according to the emulsion method. A saturated solution of tetramethylammonium iodide in a solution of 92% methanol in water was used as background for the experiments. The methanol was purified according to the method described by Kol'tgof (Ref 8). The polarograms mentioned show the presence of two waves which corresponds to the presence of two carbonyl groups coupled with double bonds, each of which can be reduced at the dropping mercury electrode. A scheme is given for the reduction mechanism of dibutylphthalate, while the potentials of the half-waves obtained are given to be -1,77 Volt and -2,06 Volt. The differences in these values from those of Whitnack (Vitnak) (Ref 4) are explained by the fact that different backgrounds were used. Calibration diagrams were plotted according to the results obtained with a pure dibutylphthalate. In the

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Polarographic Determinations of Dibutylphthalate SOV/64-58-5-13/21

case of the latter a linear dependence of the diffusion current of both waves on the concentration may be seen. The determinations carried out with the polymethyl methacrylate showed that the first polarogram wave of the reduction of dibutylphthalate is clearly visible, while the second coincides with that of methyl methacrylate. The corresponding working methods employed for the measurements of the polymethyl methacrylate and the mother liquor are described. There are 3 figures, 2 tables, and 8 references, 3 of which are Soviet.

ASSOCIATION: Eksperimental'naya laboratoriya Khar'kovskogo zavoda zubovrachebnykh materialov (Experimental Laboratory of the Khar'kov Factory for Dental Materials)

1. Dibutyl phthalate--Determination 2. Acrylic resins--Polarographic analysis

Card 2/2

BEZUGLYY, V.D.; DMITRIYEVA, V.N.

Polarographic method for determining methylsalicylate. Med.prom. 12 no.3:45-47 Mr '58. (MIRA 11:4)

1. Khar'kovskiy zavod zubovrachebnykh materialov.
(POLAROGRAPHY) (SALICYLIC ACID)

BEZUGLYY, V.D.

SHTURMAN, A.A.; BEZUGLYY, V.D.; MATS, L.N.

Making patterns of AST-T plastic. Med.prom. 12 no.4:50-52 Ap '58. (MIRA 11:5)

1. Khar'kovskiy zavod zubovrachebnykh materialov.
(PLASTICS--MOLDING)

AUTHORS: Bezuglyy, V. D., Smirnyeva, V. N. SOV/32-24-8-10/43

TITLE: The Application of the Polarographic Method in Investigations on Some Synthetic Materials (Primeneniye polyarograficheskogo metoda pri issledovanii nekotorykh plastmass)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, Nr 8, pp. 941-947 (USSR)

ABSTRACT: The experimental results of the above-mentioned experiments are given. Synthetic materials in the acrylate group were investigated, and methods were worked out for determining methyl methacrylate, dibutyl phthalate, salol, benzoyl peroxide, and hydroquinone. Data obtained in this same area by Neyman and Shubenko (Ref 1), Korshunov and Kuznetsova (Ref 2), Bobrova and Matveyeva (Ref 3), and Ryabov et al (Ref 4) are also given. It was found that methacrylic acid is not reduced at the dropping mercury electrode. The polarogram obtained from the ethyl esther of methacrylic acid was used in the analysis of plexiglass, emulsion powders, reaction mixtures, and other materials. Procedures are given for carrying out these analyses. A polarogram of the nitrile of acrylic acid was also obtained. In studies on dibutyl phthalate a cali-

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bration curve was plotted, and the first of the two polarogram waves indicated the possibility of determining this compound in the presence of methyl methacrylate. In further experiments salol was reduced at the dropping mercury electrode and on a background of $N(CH_3)_4J$ gave a wave at $E_{1/2}$= -1.91 volts where the height of the wave is proportional to the concentration. A polarogram of benzoyl peroxide was made using various backgrounds, among them those used by Lewis and Quackenbush (Lyuis i Kvakenbush) (Ref 16). Work by Bogdanetskiy and Eksner (Ref 22) is also mentioned. Hydroquinone was found to be reduced at a potential of $E_{1/2}$= +0.43 volts.

There are 9 figures, 2 tables, and 23 references, 7 of which are Soviet.

ASSOCIATION: Khar'kovskiy zavod zubovrachebnykh materialov (Kharkov Plant for Dentists' Supplies)

5(4)

AUTHORS: Bezuglyy, V. D., Dmitriyeva, V. N. SOV/32-24-12/45

TITLE: Polarographic Determination of Methyl Salicylate (Polyarograficheskoye opredeleniye metilsalitsilata)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 12, pp 1446 - 1447 (USSR)

ABSTRACT: Since the methyl ester of salicylic acid contains a double bond at the carbonyl group it can be reduced at the mercury electrode. In the work reported here the methyl salicylate was determined polarographically on a background of 0.5 n $(CH_3)_4NJ$ and $(CH_3)_4NOH$ in methanol-water solutions of varying methanol concentration. A 0.1 M solution of methyl salicylate in 92% methanol served as a standard. The polarograms were made on an apparatus from the "Geologorazvedka" Plant using a galvanometer with a sensitivity of $2.94 \cdot 10^{-9}$ Ampere/mm. A polarographic wave (Fig 1) was observed at $E_{1/2} = -2.02$ Volts the height of which varied linearly with the methyl salicylate concentration. The constant

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of the diffusion current K = 4.38; $\lg\frac{I}{I_d-I}$ is represented graphically as a function of E (Fig 2); α = 0.63, i.e., the reduction process is irreversible. Using the equation of Il'kovich n was found to be 1.84 (n = the number of electrons which are necessary to reduce one molecule). The effect of pH was determined by neutralizing an acid mixture similar to the universal buffer mixture of Britton-Robinson (boric acid was replaced with phenol) with a 0.2 N solution of tetramethyl ammonium hydroxide. In alkaline medium (pH= 11.61) a value of $E_{1/2}$ = - 2.18 Volts was obtained. The method described here was used to analyze the mixture which is found in pocket inhalators of the "ingafen" type (58.9% phenamine, 26.7% eucalyptus oil, and 14.4% methyl salicylate). There are 2 figures and 1 reference.

ASSOCIATION: Khar'kovskiy zavod zubovrachebnykh materialov (Khar'kov Plant for Dental Materials)

5(1) SOV/32-24-12-13/45

AUTHORS: Bezuglyy, D. V., Petrusevich, I. A.

TITLE: Comparison of Methods for Determining Organic Substances in Aluminate Solutions (Sravneniye metodov opredeleniya organicheskikh veshchestv v alyuminatnykh rastvorakh)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 12, pp 1448-1449 (USSR)

ABSTRACT: Aluminate solutions usually contain salts of humic acid, which precipitate out of water and bauxite, and starch, which is added to brighten the solutions. These organic substances stabilize the aluminate solutions, but hinder the crystallization of aluminium oxide. The permanganometric method (Ref 1) is used to control the concentration of organic substances present, but this method has several disadvantages. In the work reported here it was found that the best results in determining organic substances are obtained using the dichromate method (Refs 2-5). Determinations carried out according to the specifications of Yu. Yu. Lur'ye and A. I. Rybnikova (Ref 6) and Launer and Tomimattsu (Ref 7) showed that the permanganate method gives results which are much too low. Determinations

Comparison of Methods for Determining Organic Substances in Aluminate Solutions

using the dichromate method showed that the conclusion of Shul'ts (Ref 5) (Table 1) that the starch and the humus substances should be separated was not correct. The best analytical results are obtained by carrying out the dichromate oxidation in 30-40% sulfuric acid (Table 3), and the analytical procedure given is based upon this condition. There are 3 tables and 7 references, 2 of which are Soviet.

ASSOCIATION: Khar'kovskiy politekhnicheskiy institut im. V. I. Lenina (Khar'kov Polytechnical Institute imeni V. I. Lenin)

Bezuglyy, V. D.

79-2-4/64

AUTHORS: Bezuglyy, V. D., Dmitriyeva, V. N., Dorofeyev, V. V.

TITLE: Polarographic Investigation of Aminoacetophenones (Polyarograficheskoye issledovaniye aminoatsetofenonov)

PERIODICAL: Zhurnal Obschey Khimii, 1958, Vol. 28, Nr 2, pp. 308 - 317 (USSR)

ABSTRACT: The reduction of acetophenone and some of its derivatives was investigated in a number of works (references 2 - 8). It became evident that the reduction in an acid and in an alkaline medium takes place in different manners and that 2 waves are observed within certain limits of pH. In the present work the polarographic behavior of o-, p- and m-aminoacetophenones was investigated. The o-aminoacetophenone was synthesized according to the following scheme:

$$C_6H_5CH{=}CHCOOH \xrightarrow{HNO_3} NO_2C_6H_4CH{=}COOH \xrightarrow{Br_2} NO_2C_6H_4(CHBr)_2COOH$$

$$\xrightarrow{NaOH} NO_2C_6H_4C{=}CCOOH \xrightarrow{t^o} NO_2C_6H_4C{\equiv}CH \xrightarrow{H_2} NH_2C_6H_4C{=}CH \longrightarrow$$

$$\longrightarrow NH_2C_6H_4COCH_3.$$

Under these conditions the para-isomer also forms beside the o-aminoacetophenone. The separation of o- and p--isomers was performed during the process of synthesis. The m-amino-

Card 1/3

Polarographic Investigation of Aminoacetophenones

phenone was produced by the reduction of m-nitroacetophenone according to Ruppe, Braun and Tsimborskiy (reference 10) with ammonium sulfate and by subsequent purification through repeated recrystallization from water or diluted alcohol. The p-aminoacetophenone was obtained in the acetylation of anilido acid with acetyl chloride (reference 11) in the acetanhydride and subsequent hydrolysis of the N-acetyl derivative of p-aminoacetophenone and the separation of p-aminoacetophenone. The measurements were performed with the polarograph ФГ-8 with a mercury droplet electrode. The scheme of the reduction of aminoacetophenones may be represented in the following manner: In an acid medium -

$$NH_2C_6H_4COCH_3 + 2H^+ + 2e \longrightarrow NH_2C_6H_4CHOHCH_3.$$

In an alkaline medium:

$$NH_2C_6H_4COHCH_2 + 2H_2O + 2e \longrightarrow NH_2C_6H_4CHOHCH_3.$$

The results of the investigation: 1) The peculiarities of the polarographic behavior of o-,m- and p-aminoacetophenones on the mercury droplet cathode were investigated. 2) The polarographic fundamental constant of the isomers was determined: $E_{1/2}$, I_d, n. It was found that in the acid domain (pH $<$ 6,5) a wave can be observed whose $E_{1/2}$ simultaneously with the increase in pH shifts in the direction of the negative potential values. In solutions with pH $>$ 8

Polarographic Investigation of Aminoacetophenones

a wave is seen whose $E_{1/2}$ remains constant on a further change of pH. In the range of pH 6,5 - 8 two polarographic waves can be observed for the isomers. 3) The action of the position of the amino group in aminoacetophenones upon their polarographic activity is shown: in the ortho- and para-position the amino group displaces the reduction potential of the carbonyl group to the negative side, in the meta-position the amino group shows practically no influence on the amino group at all. 4) The possibility for the determination of isomers of the aminoacetophenones in the case of simultaneous occurrence was investigated.

The authors thank A. Ye. Lutskiy for his participation in the discussion of the results obtained. There are 8 figures, 2 tables, and 16 references, 4 of which are Slavic.

ASSOCIATION: **Khar'kov Plant for Dental Materials, Khar'kov Polytechnic Institute** (Khar'kovskiy zavod zubovrachebnykh materialov i Khar'kovskiy politekhnicheskiy institut)

SUBMITTED: March 14, 1957

AVAILABLE: Library of Congress

AUTHORS: Dmitriyeva, V. N., Bezuglyy, V. D. SOV/79-28-8-4/66

TITLE: Polarographic Investigations on p-Nitrosodimethylaniline (Polyarograficheskoye issledovaniye p-nitrozodimetilanilina)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol. 28, Nr 8, pp. 2021-2028 (USSR)

ABSTRACT: There is not a great deal of literature on the polarographic reduction of nitroso compounds. A few chemists have investigated 1-nitroso-2-naphthylamine, p-nitroso-diethylaniline, p-nitrosophenol, and 1-nitroso-2-naphthol (Refs 1, 4). The polarographic reduction of N-nitrosoamine is considered in a series of papers (Refs 5-7). The authors of the present paper investigated the reduction of p-nitrosodimethylaniline at the dropping mercury electrode, since nothing has appeared in the literature about this. The polarograms, curves, and tables in the experimental section give the following results: The most important polarographic constants of p-nitrosodimethylaniline were determined. It was found that this compound gives two polarographic waves at the dropping mercury electrode (reduction); one wave is produced in acid and the other

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Polarographic Investigations on p-Nitrosodimethylaniline

in base, and each varies in proportion to the concentration. In several acid solutions two waves were produced at the same time. The mechanism of the reduction of the nitrosodimethylaniline was worked out and the number of electrons involved in the reduction was calculated by two different methods. This number is 4. The practical application of the results is indicated for the quantitative determination of p-nitrosodimethylaniline in synthetic reactions of this compound. There are 8 figures, 3 tables, and 11 references, 3 of which are Soviet.

SUBMITTED: June 28, 1957

BEZUGLYY, V.D.; DMITRIYEVA, V.N.

Polarographic determination of benzoyl peroxide in several plastics. Zhur. prikl. khim. 31 no.2:298-305 F '58. (MIRA 11:5)

1. Khar'kovskiy zavod zubovrachebnykh materialov.
(Benzoyl peroxide) (Polarography)

SHTURMAN, A.A.; ARONOV, Ye.G.; BEZUGLYY, V.D.; MATS, L.N.

Plastic dies for stamping and bending. Kuz.-shtam.proizv. 1 no.6:41-42 Je '59. (MIRA 12:9)
(Dies (Metalworking)) (Plastics)

DMITRIYEVA, V.N.; BEZUGLYY, V.D.

Polarographic determination of salol. Apt.delo 8 no.2:17-19 Mr-Ap '59. (MIRA 12:5)

1. Iz eksperimental'noy laboratorii Khar'kovskogo zavoda zubovrachebnykh materialov.
(SALOL) (POLAROGRAPHY)

15(8), 18(5)

SOV/128-59-9-18/25

AUTHOR: Bezuglyy V.D., Candidate of Chemical Sciences, Shturman A.A. and Mats L.N., Engineers

TITLE: Repairing Castings with Self-Setting Plastics

PERIODICAL: Liteynoye proizvodstvo, 1959, Nr 9, pp 43-44 (USSR)

ABSTRACT: Defects of castings appearing in the form of gas-blisters and blowholes, both in ferrous and nonferfous metal castings, are usually repaired by gas-or-electric welding, filling by liquid metal, or by metallization with powdered metal. However, all these methods contain a number of shortcomings. A group of engineers at the Khar'kov Plant of Dental Surgery Materials Ye.G. Aronov, V.D. Bezuglyy, A.A. Shturman, L.N. Mats, M.Ya. Solomonov, engineers of the Khar'kov Tractor Works L.P.Seleznev, A.A. Ridnyy, B.A. Sevruk, and the Senior Teacher of KhPI, I.T. Garkusha have proposed a method of closing up the holes in castings by means of self-setting plastic mass AST-T. The mass consists of a powder and a liquid. The powder is an emulsive polymethylmeta-crilat with benzoile peroxide; the liquid is methyl-metacrilate with tertiary amine. The plastic mass

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has the following physico-mechanical properties: heat-stability - 90° (according to Martens); hardness - 13-19 H_B; specific gravity - 1.18 gr/cm^3; specific tenacity - 8 to 12 kg/cm^2; tensil strength - 450 to 500 kg/cm^2; bending strength - 800-1400; limit of pressure strength - 1200 to 1600 kg/cm^2. The filling process comprises the following operations: First of all, the holes are thoroughly cleaned with the liquid AST-T; the mass is prepared by mixing the powder with the liquid in a glass, faience or aluminum vessel, whereupon, it should stay 5 to 10 minutes until it swells. The ratio powder-liquid is 2:1 by weight for large holes, and 1:1 for small ones. After the filling, the repaired place be isolated from the air by means of cellophane. During the filling process, the castings should have a room temperature. The length of time required for consolidation of the mass is 10-15 minutes. The application of this method was recognized and accepted by a number of works, such as Khar'kov Tractor Works, Bezhitskiy Steel Works, Kramatorskiy Works of Hea-

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vy Machine-Building, and many others, and proved a success.

5(4)

AUTHOR: Bezuglyy, V. D. SOV/32-25-3-6/62

TITLE: Polarographic Determination of Aluminum (Polyarograficheskoye opredeleniye alyuminiya)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 277 - 280 (USSR)

ABSTRACT: Polarographic determinations of aluminum are difficult since aluminum hydrolyzes at pH>4, while at pH<3.2 the polarographic wave of hydrogen disturbs the determination. The methods for determining aluminum described in publications are mainly indirect. Among other buffer additions (Refs 1,2) the application of calcium gluconate (I) (Refs 3-5) as a complex former seems to be the most suitable. The reaction between aluminum and (I) takes place according to a scheme which is similar to that of Al with salicylic acid (Ref 1). In the present case Al determinations are carried out with (I) in order to find out optimum conditions. At pH = 3.5 - 5 the most distinctly marked polarographic waves for Al were obtained. The addition of calcium chloride to the (I)-solution (5% (I) + 3-5% $CaCl_2$, $E_{1/2}$ = - 1.57 - 1.60 v) (Fig 3) is

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Polarographic Determination of Aluminum SOV/32-25-3-6/62

recommended in order to stabilize the pH value and to obtain an increased buffer effect. Aluminum is irreversibly reduced with (I) in the complex compound. It was observed that in the presence of boric acid an increased yield is obtained which is due to an increase in the hydrogen concentrations. For this reason, a neutralization of the H^+-ions with calcium hydroxide (besides bromophenyl blue) must take place before the aluminum determination. Aluminum determinations may be carried out also in a so-called Burow's solution (Ref 7). There are 4 figures, 1 table, and 7 references, 5 of which are Soviet.

ASSOCIATION: Khar'kovskiy zavod zubovrachebnykh materialov (Khar'kov Factory for Dentist's Material)

Card 2/2

5(3)

AUTHORS: Dmitriyeva, V. N., Bezuglyy, V. D. SOV/32-25-5-10/56

TITLE: Polarographic Determination of Butyl Methacrylate in Plasticized Polybutyl Methacrylate (Polyarograficheskoye opredeleniye butilmetakrilata v plastifitsirovannom polibutilmetakrilate)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 5, p 555 (USSR)

ABSTRACT: The method brought here is based on those already described in publications for the polarographic determination of the esters methacrylic acid (Refs 1, 2), as well as of dibutyl phthalate (I) and other derivatives of phthalic acid (Refs 3 - 6). Plasticized polybutyl methacrylate (II) is analyzed, containing (I) as plasticizer in an amount from 8 to 10 times larger than the free monomer. The content of butyl methacrylate (III) and that of (I) may be determined separately. Polarograms were taken on an FG-8 polarograph with an Hg-drop electrode. The lower Hg layer served as anode, while a 0.02 n $(CH_3)_4NJ$ solution (in 94% methanol) with 4-6% benzene was used as background. A 0.05 m solution of (III) and 0.025 m solution of (I) in methanol was used as standard. Both esters are reduced on the

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Polarographic Determination of Butyl Methacrylate in Plasticized Polybutyl Methacrylate SOV/32-25-5-10/56

Hg-drop electrode, in which connection (III) exhibits the reduction wave $E_{1/2}$ = - 1.99 v, and (I) $E_{1/2}$ = 1.77 v - 2.06 v, respectively (Fig). The accuracy of determination was tested on artificial mixtures and proved satisfactory (Table). There are 1 figure, 1 table, and 6 references, 3 of which are Soviet.

ASSOCIATION: Khar'kovskiy zavod zubovrachebnykh materialov (Khar'kov Factory of Dentistry Materials)

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05720
SOV/32-25-10-9/63

5(3), 15(8)

AUTHORS: Bezuglyy, V. D., Dmitriyeva, V. N.

TITLE: On the Application of the Polarographic Method to the Identification of Plastics.

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 10, pp 1180-1184 (USSR)

ABSTRACT: A polarographic method for the qualitative determination of various plastics was developed; it provides a dry distillation of the synthetic material, as well as its bromination- or nitration products. The method according to A. V. Ryabov and G. D. Panova et al (Refs 3,4), with some modifications, was used for preparing the bromination products. The distillate is collected in methanol, neutralized (if necessary), possibly brominated, and then polarographed. A polarograph of type SMG-8 with Hg dropping electrode was used. The values of the potential semiwaves of some compounds (polymethylmethacrylate, polystyrene, polyisobutylene, etc) were found in publications, the semiwaves of other substances were determined by means of samples of a known composition. The testings of polyisobutylene and natural rubber are indicated as examples. The distillation products of

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On the Application of the Polarographic Method to the Identification of Plastics

these substances had to be brominated to obtain polarogram waves (Fig 1). The results are in good agreement with those found by A. V. Ryabov et al (Ref 4). The distillation products of polymethylmethacrylate and polystyrene ($E_{1/2}$ = -1.91 v, and -2.34 v, respectively), as well as their bromination products ($E_{1/2}$ = -0.02 v and +0.14 v) (Fig 2) can be directly polarographed. The analytical method described takes 2 - 2.5 h. The analytical results of various experiments, as well as those obtained for polyethylene, polychlorovinyl, polyisobutylene, polymethylmethacrylate, polybutylmethacrylate, "aminoplast", "fenoplast" and others, and their bromination- and nitration products, respeotively are indicated (Tables 1,2). There are 2 figures, 2 tables, and 7 references, 5 of which are Soviet.

ASSOCIATION: Khar'kovskiy zavod zubovrachebnykh materialov (Khar'kov Works of Dental Materials); Khar'kovskiy filial instituta khimicheskikh reaktivov (Khar'kov Branch of the Institute of Chemical Reagents)

BEZUGLYY, V.D.; DMITRIYEVA, V.N.; TARASYUK, T.S.; POLYAKOV, V.P.; IZMAYLOV, N.A.

Polarographic determination of glyoxylic acid. Zhur.anal.khim. 15 no.2:231-233 Mr-Ap '60. (MIRA 13:7)

1. Khar'kovskiy gosudarstvennyy universitet im. A.M.Gor'kogo i Khar'kovskiy zavod zubovrachebnykh materialov.
(Glyoxylic acid)

5.4600

77346
SOV/79-30-1-7/78

AUTHORS: Bezuglyy, V. D., Dmitriyeva, V. N., Dorofeyev, V. V.

TITLE: Polarographic Study of Aminoacetophenones. II. N,N-Dimethyl- and N-Acetylaminoacetophenones

TITLE: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 38-46 (USSR)

ABSTRACT: Continuing their previous studies (ZhOKh, 28, 308, 1958), the results of which disclosed dependence of the polarographic characteristics of o- and p-aminoacetophenones on the position of amino-groups, the authors seek to establish a relationship between the polarographic data and different groups present in the molecules, and the state of the latter in solutions, under different conditions. Five of the six isomers of the experimental two compounds were made by known methods, and purified until their mp were the same as those given in the literature. The sixth isomer, m-N,N-dimethylaminoacetophenone, was made as follows: m-N,N-dimethylaminoacetophenone hydrochloride was precipitated by

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passing HCl through its ether solution, and the precipitate was washed with ether, dissolved in water, boiled with animal charcoal, and filtered. The amine was formed by adding sodium hydroxide to the filtrate; the product was steam-distilled, its crystals in the distillate filtered out, and the rest of the filtrate extracted with ether. The colorless needles obtained after recrystallization had mp 41° C. The polarographic behaviour of the 6 isomers was examined using a dropping Hg cathode, and the principal polarographic parameters determined in buffered and nonbuffered solutions. The half-wave potentials measured by comparison with saturated aqueous calomel electrode are illustrated in Fig. 1 for one of the isomers. The polarographs for the other 5 isomers are of similar type; the slight differences depend on the isomerism of the aminoacetophenones and on the nature of substituents. The experiments proved that all 6 isomers are reduced at the mercury electrode, but at somewhat different pH values. The differences are interpreted from the point of view

Polarographic Study of Aminoacetophenones. II. N,N-Dimethyl- and N-Acetylaminoacetophenones

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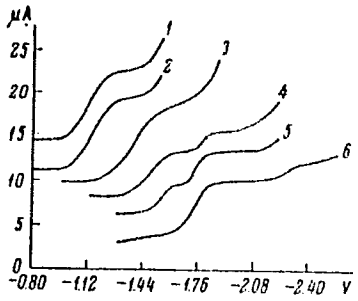

Fig. 1. Polarographic waves of o-N,N-dimethylaminoacetophenone against the background of buffer solutions with different pH values: (1) 2.2; (2) 3.75; (3) 6.13; (4) 7.26; (5) 10.29; (6) 11.54. Depolarizor content = 1.55 mmol/liter.

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Polarographic Study of Aminoacetophenones. II. N,N-Dimethyl- and N-Acetylaminoacetophenones

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SOV/79-30-1-7/78

of electron theory of organic molecules and their state in solutions. There are 6 figures; 3 tables; and 6 references, 4 German, 1 Soviet, 1 U.S. The U.S. reference is: Bogert, J. Am. Chem. Soc., 46, 1703, 1913.

ASSOCIATION: Central Laboratory of the Khar'kov Plant for Dental Materials and Khar'kov Polytechnic Institute (Tsentral'naya laboratoriya Khar'kovskogo zavoda zubovrachebnykh materialov i Khar'kovskiy politekhnicheskiy institut)

SUBMITTED: May 12, 1958

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BEZUGLYY, V.D.; DMITRIYEVA, V.N.; TARASYUK, T.S.; IZMAYLOV, N.A.

Polarographic study of glyoxylic acid. Zhur.ob.khim. 30 no.7:2415-2421 Jl '60. (MIRA 13:7)
(Glyoxylic acid)

S/076/60/034/04/15/042
B010/B009

AUTHORS: Bezuglyy, V. D., Novik, Ye. Yu. (Khar'kov)

TITLE: Polarographic Investigation of Terephthalic Acid

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No. 4, pp. 795-801

TEXT: Since terephthalic acid is becoming increasingly important in the manufacture of plastics the possibility of determining this acid polarographically was investigated. The experiments were carried out with the aid of and FG-88-polarograph and an Hg dropping electrode in LiCl-, $MgCl_2$-and $CaCl_2$-solutions, and with a buffer of the following composition: $(C_2H_5)_4NOH + CH_3COOH +$ $+ H_3PO_4 + C_6H_5OH$. The effects of the concentrations of these solutions and the pH (Table) were investigated. It was found that the anion of terephthalic acid is reduced on the Hg dropping electrode. The reduction potential depends on the nature of the background and particularly on that of the cations as well as on their concentration. The most marked polarographic waves are obtained in the

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presence of Mg^{2+} and Ca^{2+}, while the anions SO_4^{2-} and PO_4^{3-} cause a deformation of the waves. The process of electric reduction of terephthalate is believed to be due to ion reactions in the solution (which has already been pointed out by A. N. Frumkin (Refs. 3,4). These ion reactions result in the formation of cation bridges, thus facilitating the transportation of depolarizer particles to the cathode. V. K. Semenchenko (Ref. 5) has also pointed to a formation of "associated ion pairs" in electrolyte solutions. The anions disturb the formation of cation bridges between the electrode and the anions of terephthalic acid. The reduction of terephthalic acid is explained by the conjugation of the polar carbonyl groups with the system of double bonds of the benzene ring. The application of the polarographic method for the quantitative determination of terephthalic acid is shown. An equation by Il'kovich is mentioned in the text. There are 7 figures, 1 table, and 8 references, 4 of which are Soviet.

SUBMITTED: June 23, 1958

SHTURMAN, Aleksandr Abramovich; BEZUGLYY, Vasiliy Danilovich; MATS, Liya Naumovna; AL'PERIN, G.R., red.; GRIGOR'YEVA, I.S., red. izd-va; BOL'SHAKOV, V.A., tekhn. red.

[Use of AST-T self-solidifying plastic in the manufacture of machinery] Samotverdeiushchaia plastmassa AST-T v mashinostroenii. Leningrad, 1961. 29 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Seriia: Sinteticheskie materialy, no.14) (MIRA 15:8)

(Plastics)

S/653/61/000/000/011/051
I060/I242

AUTHORS: Bezuglyy, V.D., Mats, L.N., and Shturman, A.A.

TITLE: A cold-hardened composition based on ACT (AST) acrylates

SOURCE: Plastmassy v mashinostoyenii i priborostroyenii. Pervaya resp. nauch.-tekh. konfer. po vopr. prim. plastmass v mashinostr. i priborostr., Kiev, 1959. Kiev, Gostekhizdat, 1961. 105-112

TEXT: This work investigates the chemical aspect of the polymerization process at low temperatures and the general properties of a cold-hardened acrylico composition. It lists a few compounds obtained through the application of the oxidation-reduction system for modification of technological properties of polymers. The following compounds are now being used in dentistry: 1) AST-1A, a liquid con-

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S/653/61/000/000/011/051
I060/I242

A cold-hardened composition...

taining 98% methyl methacrylate and 2% dimethylparatoluidine, and a powder containing 0.9-1.0% benzoyl peroxide; 2) AST-2A a liquid containing 99% methyl methacrylate and 1% dimethylparatoluidine, mixed in equal proportions, with a liquid containing 80% methyl methacrylate and 20% methacrylic acid. A similar AST-T composition used in industry. It consists of a powder containing 97% polymethyl methacrylate emulsion, 1.5% benzoyl peroxide, 1.5% zinc oxide, and of a liquid containing 97% methyl methacrylate and 3% dimethylaniline. Its adhesive properties can be improved by adding epoxide resins. There are 6 tables.

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S/653/61/000/000/012/051
I007/I242

AUTHORS: Shturman, A.A., Bezuglyy, V.D., and Mats, L.N.

TITLE: The application of self-hardening ACT-T (AST-T) plastics in machinery construction

SOURCE: Plastmassy v mashinostoyenii i priborostroyenii. Pervaya resp. nauch.-tekh. konfer. po vopr. prim. plastmass v mashinostr. i priborostr., Kiev, 1959. Kiev, Gostekhizdat, 1961, 113-125

TEXT: A new self-hardening plastic of the ACT-T (AST-T) type, containing acrylic acid and 10 to 40% ЭД-6(ED-6) epoxy resin is used to repair casting defects, in the manufacture of casting patterns supporting ribs for large-size wooden patterns, molding templates, for the production of semi-permanent press-molds in the lost-wax casting process, and in forging. A new electroconductive plastic of the

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The application of cold-hardening...

same type has shown good results. AST-T self-hardenizing plastics do not contain toxic hardeners and their production cycle is much shorter. They harden at room temperature and have the technological advantage of responding to a low pressure. There is 1 table.

BELYANKIN, F.P., otv. red.; BEZUGLYY, V.D., red.; GROZIN, B.D., red.; DRAYGOR, D.A., red.; GURARIY, M.G., red.; LOGAK, N.S., red.; MITSKEVICH, Z.A., red.; PESIN, L.M., red.; RYBCHEVSKIY, Yu.S., red.; CHERNENKO, L.D., red.; YATSENKO, V.F., red.; KUDRYAVTSEV, G., red.; LUPANDIN, I., red.; SHAFETA, S., tekhn. red.

[Use of plastics in the manufacture of machinery and instruments] Plastmassy v mashinostroenii i priborostroenii. Kiev, Gos. izd-vo tekhn. lit-ry USSR, 1961. 573 p. (MIRA 14:12)
(Plastics) (Machinery industry) (Instrument manufacture)

S/081/62/000/016/025/043
B168/B186

AUTHORS: Bezuglyy, V. D., Mats, L. N., Shturman, A. A.

TITLE: A cold-hardening composition based on ACT (AST) acrylates

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 16, 1962, 519, abstract 16P38 (In collection: Plastmassy v mashinostr. i priborostr. Kiyev, Gostekhizdat USSR, 1961, 105-112)

TEXT: The conditions of low-temperature polymerization of methylmetacrylate (I) were worked out for the production of cold-hardening compositions based on acrylate. The following were found to be most suitable: filler - finely divided emulsion of polymethylmetacrylate (PMMA), with a ratio PMMA : I = 10 : 4-5, initiator - a redox system [benzoyl peroxide (II) 0.4 %, dimethylaniline (III) 2 %], temperature 28-35°C, initiation time 10-11 min. The effects on initiation velocity of the quantity of II and III, temperature, polar solvent admixtures and acids were investigated. It was shown that negligible quantities of polar solvents (water, alcohol etc.) and acids (formic, metacrylic etc.) increase the initiation velocity. On the basis of the results obtained the following formulations

S/081/62/000/016/025/043
B168/B186

A cold-hardening composition...

were worked out for compositions to be used in medicine - marks AST (reducing agent dimethylparatoluidine, which increases the light stability of plastics) and in industry - marks АСТ-Т (AST-T) (in parts by weight): powder 2 (emulsion of PMMA 97, II 1.5, ZnO 1.5), liquid 1 (I 97 and III 3). In order to improve its adhesive properties the plastic AST-T was modified with epoxy resins. Constitution of the resultant composition АСТ-ТЭ (AST-TE) (in parts by weight): powder 2 (PMMA 9, II 2, and ZnO 1.5) and liquid 1, containing 7 epoxy resin ЭД-5 (ED-5) or ЭД-6 (ED-6), I 70, metacrylic acid 20 and III 3. The physical, mechanical and electrical properties of articles made from AST-T compositions are given.
[Abstracter's note: Complete translation.]

Card 2/2

NAGORNAYA, L.L.; BEZUGLY, V.D.; GREKOV, A.P.

Photoluminescence and scintillation properties of certain derivatives of 1,3,4-oxadiazole in polystyrene. Opt. i spektr. 10 no.4:555-557 Ap '61. (MIRA 14:3)

(Oxadiazole)

BEZUGLYY, V.D.; NOVIK, Ye.Yu.

Polarographic method for determining terephthalic acid. Zav.lab.27 no.5:544-545 '61. (MIRA 14:5)

1. Khar'kovskiy zavod zubovrachebnykh materialov.
(Terephthalic acid)

PREOBRAZHENSKAYA, Ye.A.; BEZUGLYY, V.D.

Polarographic determination of p-biphenylcarboxaldehyde.
Zav.lab. 27 no.7:814-816 '61. (MIRA 14:7)

1. Khar'kovskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta khimicheskikh reaktivov.
(Biphenylcarboxaldehyde)

27901
S/079/61/031/010/001/010
D227/D304

53610
54500

AUTHORS: Bezuglyy, V.D., and Shimanskaya, N.P.

TITLE: Polarographic study of some oxozoles

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 10, 1961, 3160-3177

TEXT: The investigations were concerned with phenyl-, diphenyl-, and naphthyl substituted oxozoles, used as luminophores in a scintillator to establish the relation between their polarographic and optical properties. The measurements were conducted with the Geyrovsky-Shikal-polarograph using a saturated, high specific resistance solution of $N(C_2H_5)_4$ I in 92% methanol. The solutions of oxozoles used in the investigation were prepared using 60:40 methanol:dioxane mixtures. The experiments showed that phenyl-, naphthyl-, and biphenyl- substituted oxozoles undergo reduction at the cathode giving unique polarographic waves for different substituents. 2-Methyl-5-phenyl-oxozole did not reduce under the experimental conditions used, but 2,5-diphenyl oxozole gave two waves on the polarograph, whose half wave potentials corresponded to

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Polarographic study ...

-2.10 and -2.33V, referred to the standard calomel electrode. Substitution of the 2-phenyl radical with 2α-naphthyl displaces the first half-wave potential to -1.85V; ß-naphthyl substitution displaces $E_{1/2}$ of the first wave to -2.02V. $E_{1/2}$ of the second wave for 1-naphthyl derivative is -2.23 and for 2-naphthyl derivative -2.23, i.e. very near the value for the second wave of 2,5-diphenyloxozole. A greater effect may be obtained by introducing into position 2 of the diphenyloxozole radical, when $E_{1/2}$ of the first wave = -1.77 with $E_{1/2}$ for the second wave -2.18V and $E_{1/2}$ for the third wave -2.28V. This compound may be considered composed of two 5-phenyloxozole groups joined by a phenyl radical forming a bridge between the electron interaction of the two groups. If the bridge is provided by -CH=CH-, a group containing π electrons, $E_{1/2}$ is displaced towards less negative values and is equal to -1.36V. Introduction of a $-CH_2-CH_2-$ bridging group causes the loss of the polarographic activity of 1,2 - di

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Polarographic study ...

(5 phenyloxozole)-ethone. To investigate the effect of 5-position substituted derivatives, 2,5-di-(4-biphenylyl) oxozole and 2-(4-biphenylyl)-5-(1-naphthyl)- had $E^1_{1/2}$ = -2.00V, $E^2_{1/2}$ = 2,22V and $E^1_{1/2}$ = -1.97V, and $E^2_{1/2}$ = 2,22V respectively. From the experimental results it follows that the 5-membered oxozole ring undergoes reduction, under specific conditions, at the mercury dropping cathode and the ease of reduction depends on the substituent, and its position in the ring. Substitution of phenyl instead of methyl group in 2-position gives rise to unique polarographic waves. Substituents in position-5 have a smaller effect and the introduction of 1-naphthyl in place of biphenyl in the 5-position (substituents in position-2 remaining the same) changes the half-wave potential very little. It follows then that the most readily reducible is the C=N- bond and only after its reduction can the link between position-2 substituents and >C=C< bond (between 4th and 5th C) be broken; the substituent has practically no effect on the $E_{1/2}$ of the second wave. The electro-negative effect of

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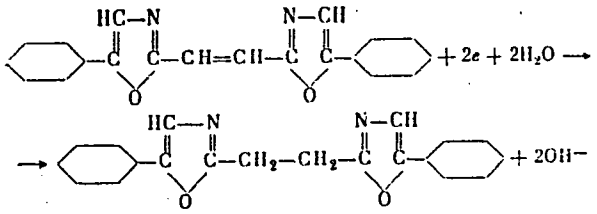
Polarographic study ...

aromatic radicals, no reduction occurring with alkyl substituents joined to >C=N- group, is presumably due to the lengthening of the chain of the conjugated double bonds. It must be mentioned that contrary to other investigated oxozole derivates, compound no. underwent reduction along the -CH=CH- bond and its number of electrons taking part in the reduction of one molecule of the compound was equal to 2. It follows from research that the electrochemical reaction on the mercury dropping cathode for 1.2-di (5-phenyloxozolyl)-ethylene may be represented by first wave Eq.



(1)

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Polarographic study ...

which explains the absence of second waves. A table also gives the wave lengths in the region of maximum absorption and it may be seen that the character of λ_{max}, in general, corresponds to the variation of $E_{1/2}$ values. The fact also confirms the dependence of polarographic results on the character of the substituent. It was also interesting to compare scintillation effectiveness of the compounds with the polarographic results which shows a certain correlation between these properties. It may be concluded that the polarographic method may be used for determining the effectiveness of a given substance as a scintillator, this effectiveness being higher for less negative $E_{1/2}$ values. There are 1 table, 10 figures and 9 references: 5 Soviet-bloc and 4 non-Soviet-bloc. The references to the English-language publications read as follows: F. Hayes, L. King, J. Am. Chem. Soc. 74, 1106 (1952); E. Hartnell, C. Bricker, J. Am. Chem. Soc. 70, 3385 (1948).

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27901
S/079/61/031/010/001/010
D227/D304

Polarographic study ...

ASSOCIATION: Khar'kovskiy filial vsesoyuznogo nauchno-issledovatel'skogo instituta khimicheskikh reaktivov (Khar'kov branch of All-Union Scientific Research Institute for Chemical Reagents)

SUBMITTED: September 10, 1960

Card 6/6

NAGORNAYA, L.L.; BEZUGLYY, V.D.; DEMCHENKO, N.P.

Photoluminescent and scintillation properties of certain oxazole derivatives in polystyrene. Opt. i spektr. 13 no.4:518-521 O '62. (MIRA 16:3)
(Scintillation (Physics))
(Oxazole)
(Luminenscence)

BEZUGLYY, V.D.; DMITRIYEVA, V.N.; BATOVSKAYA, T.A.

Polarographic determination of acenaphthylene in polymers. Zhur.-anal.khim. 17 no.1:109-112 Ja-F '62. (MIRA 15:2)

1. All-Union Scientific Research Institute of Monocrystals, Scintillators and Highly Pure Materials.
(Acenaphthylene) (Polymers) (Polarography)

MEL'NIK, L.A.; DMITRIYEVA, V.N.; SHKODINA, I.A.; BEZUGLYY, V.D.

Determination of β-acetyltetralin by polarography. Zhur.anal. khim. 17 no.6:754-758 S '62. (MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintillyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv, Khar'kov.

(Acetonaphthone) (Polarography)

L 10613-63 EPR/EWP(j)/EPF(c)/EWT(m)/BDS ASD Ps-4/Pc-4/Pr-4 RM/WW

ACCESSION NR: AP3001025 S/0075/63/018/005/0654/0656

AUTHOR: Ponomarev, Yu. P.; Dmitryyeva, V. N.; Bezugly*y, V. D. 71

TITLE: Determination of N-vinylcarbazole in its polymers

SOURCE: Zhurnal analiticheskoy khimii, v. 18, no. 5, 1963, 654-656

TOPIC TAGS: N-vinylcarbazole, mercuric acetate, methanol, acetic acid, chloroform, dichlorethane

ABSTRACT: The method developed for quantitatively determining N-vinylcarbazole in its polymers or in copolymers with methyl methacrylate comprises of reacting the compound with mercuric acetate in methanol. The liberated acetic acid is titrated with alkali solution with phenolphthalein; the -OCH sub 3 (from methanol) and the -HgOCOCH sub 3 added to the vinyl group in the compound analyzed. Chloroform or dichlorethane may be used as additional solvents

ASSOCIATION: Vsesoyzny*y nauchno-issledovatel'skiy institut monokristallov, stsintillyatsionny*kh materialov i vy*sokochisty*kh khimicheskikh veshchestv, Kharkov (All-Union Scientific research institute for monocrystals, scintillation materials and high-purity chemical substances).

Card 1/2/

BEZUGLYY, V.D.

"Polarographic analysis in industrial sanitary chemistry" by I.B. Kogan. Reviewed by V.D. Bezuglyi. Zav. lab. 28 no.9: 1152 '62. (MIRA 16:6)

(Sanitary chemistry) (Polarography)
(Kogan, I.B.)

BEZUGLYY, V.D.; DMITRIYEVA, V.N.; PREOBRAZHENSKAYA, Ye.A.; SHKODINA, I.A.

Polarographic study of p-acetylbiphenyl and p-acetyl-p'-fluorobiphenyl. Zhur.ob.khim. 32 no.9:2770-2777 S '62. (MIRA 15:9)
(Acetophenone) (Polarography)

S/120/63/000/001/045/072
E032/E314

AUTHORS: Bezuglyy, V.D., Grachev, N.M. and Dykhanova, A.S.

TITLE: The efficiency of film scintillators based on polytrimethyl styrene

PERIODICAL: Pribory i tekhnika eksperimenta, no. 1, 1963, 163

TEXT: It has been shown in a previous paper that poly-2,4,5-trimethyl styrene may be suitable as a base for plastic scintillators. Experimental study of this material showed that its scintillation efficiency was higher by 50% as compared with the efficiency of polystyrene-base film scintillators. The scintillating films used in these measurements included 1% (by wt.) of 2,5-diphenyloxazol. The relative scintillation efficiency of polystyrene, poly-3-methyl styrene, poly-4-methyl styrene, poly-2,4-dimethyl styrene and poly-2,4,5-trimethyl styrene was found to be 100, 105, 120, 140 and 150, respectively. The relative scintillation efficiency was measured with the АИ-100 (AI-100) apparatus incorporating an ФЭУ-29 (FEU-29) photomultiplier. The scintillations were excited by Po^{210} α-particles.

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The efficiency of film ....

All the films had an equal thickness (0.1 mm).

ASSOCIATION: VNII Monokristallov
(VNII Single Crystals)

SUBMITTED: April 2, 1962

Card 2/2

BEZUGLYY, V.D.

Application of the polarographic method in the investigation of polymeric materials. Trudy Kom.anal.khim. 13:139-148 '63. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov, Khar'kovskiy filial.
(Polymers) (Polargraphy)

L 33501-65 EWG(j)/EWT(m)/EPF(c)/EWP(j)/EWA(h)/T/EWA(l) Pc-4/Pr-4/Peb RM
ACCESSION NR: AR5003889 S/0081/64/000/018/S085/S085

SOURCE: Ref. zh. Khimiya, Abs. 18S493

AUTHOR: Bezuglyy, V. D.; Solomonov, V. N.

TITLE: A method for production of plastic scintillators in the form of granules

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy. Khar'kov, Khar'kovsk. un-t, 1963, 22-24

TOPIC TAGS: scintillator, plastic, polymerization, polystyrene, dosimetry, granule formation

TRANSLATION: In order to obtain polystyrene scintillators in the form of granules ranging in size from 0.1 to 1 mm, a granular polymerization method was selected. The technical processes were found which make it possible to control particle size. A stainless steel reactor (1 l in capacity) equipped with stirrer and reflux condenser is charged with 133 g of styrene and 2% p-terphenyl and 0.06% RORORR are introduced at 50° C. After complete dissolution, benzoyl peroxide and polyvinyl alcohol stabilizer solution are added. 150-500% water is added. The mixture is heated to 80° C and kept at this temperature for 6 hours after which it is cooled

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to 40° C. The obtained suspension is washed on a filter. The granules are dried at 20° C and sieved to obtain the proper size fraction. The yield of granules is in excess of 90%. The obtained scintillators will be used for measurement of radioactive dosimetry. Work has been initiated on the production of scintillators from polymethyl styrene by an analogous method. L. Kotlyarevskaya

SUB CODE: OC ENCL: 00

L 33504-65 EWG(j)/EWT(m)/EPF(c)/EWP(j)/T/EWA(h)/EWA(l) Pc-4/Pz-4/Peb RM
ACCESSION NR: AR5003892 S/0081/64/000/018/S086/S086

SOURCE: Ref. zh. Khimiya, Abs. 18S497

AUTHOR: Bezuglyy, V. D. and Grachev, N. N.

TITLE: Plastic scintillators made from vinyl toluene and vinyl xylene

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy. Khar'kov, Khar'kovsk. un-t, 1963, 33-39

TOPIC TAGS: scintillator, vinyl plastic, xylene, toluene

TRANSLATION: In order to improve the efficiency of plastic scintillators, industrial vinyl toluene and vinyl xylene were used as bases for polymerization. They were separated from the stabilizer, dried over $CaCl_2$ and distilled twice in a glass vacuum distillation column at a residual pressure of 5-10 mm Hg just before use (to avoid oxidation). The luminescing additives were injected in the amount of 3% of the weight of the monomer. These were paraterphenyl and 0.1% RORGR. Benzoyl peroxide (0.05%) and azodinitrile diisobutyric acid (~0.2%) were used as initiators. The reagents were preliminarily purged with N_2 and placed in an ampule which was then sealed and placed in a thermostat. Polymerization was carried out in two

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L 33504-65
ACCESSION NR: AR5003892

stages: at 145-150°C for 5 hours and at 185-190°C for 20 hours. The efficiency of a plastic scintillator with polished surface 20 mm diameter and 15 mm high was determined from the photoelectric current produced in FEU-29. For excitation, an Ag^{110} preparation was used. Optical contact was realized by means of vaseline. It was established that the highest efficiency scintillators were based on a mixture of vinyl xylene isomers. Azodinitrile diisobutryic acid is a new initiator which makes it possible to speed up production of the scintillators without sacrifice of the optical properties. (See *Ref. Zhur. Khim.*, 1964, 3S378).

SUB CODE: OC OP ENCL: 00

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L 33502-65 EWG(j)/EPF(c)/EWI(m)/EWP(j)/I/EWA(h)/EWA(1) Pc-4/Pr-4/Peb RM

ACCESSION NR: AR5003890 S/0081/64/000/018/S085/S085

SOURCE: Ref. zh. Khimiya, Abs. 18S495

AUTHOR: Bezuglyy, V. D.; Semenenko, N. G.; Vlasov, V. G.; Zubkova, V. S.

TITLE: Production of large plastic scintillators from polystyrene

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy. Khar'kov, Kharkovsk. un-t, 1963, 43-53

TOPIC TAGS: scintillator, polymerization, styrene polymerization, styrene plastic

TRANSLATION: The effects of various factors (benzoyl peroxide, scintillating additives and temperature) on the polymerization of styrene and scintillation properties of plastic scintillators were studied. The properties of the scintillators were evaluated from the photoelectric current produced in an FEU-19 photomultiplier. An Ag^{110} source of ~0.1 millicurie intensity was used as a radiation source. A thoroughly purified styrene was used, having the following characteristics: $d_4^{20} = 0.909$ g/cm^3, $n_D^{20} = 1.5467$ and recrystallized by alcohol precipitation from a $CHCl_3$ solution of industrial benzoyl peroxide. To avoid milky inclusions, bubbles

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L 33502-65
ACCESSION NR: AR5003890

and macrocracks in the scintillators it is recommended that the PTR be dried prior to loading at 120-140°C for 3-4 hours. The monomer content of the polymer must exceed 3%. This method for producing scintillators differs from existing methods in that the changing of components and polymerization of styrene along with RTR and RORDR is carried out continuously, saving time and eliminating simultaneous liberation of a large amount of heat, the latter being dissipated into the heat exchanger of the thermostat in the course of the polymerization process. The optimum time for polymerization of the scintillators in 5-10 l volumes was established: 60 hours at 150°C and 50 hours at 200°C. The pulsating decrease of temperature during heating (90-100°C) decreases significantly the shrinkage and lowers the stresses in the vitrification process. This method has been tested in the production of large scintillators up to 1000 mm in diameter and weighing up to 180 kg. (See *Ref. Zhur. Khim.*, 1964, 3S378). L. Kotlyarevskaya.

SUB CODE: OC, NT ENCL: 00

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L 31836-65 EWG(j)/EWT(m)/EWP(j)/EWA(h)/EWA(l) Pc-4/Peb RM

ACCESSION NR: AR5005653 S/0058/64/000/012/A048/A048

SOURCE: Ref. zh. Fizika, Abs. 12A427

AUTHORS: Tsirlin, Yu. A.; Vershinina, S. P.; Bezuglyy, V. D.; Zaplesnichenko, G. P.

TITLE: Scintillation detector for dosimetry of γ and x-rays

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy. Vyp. 3. Khar'kov, Khar'kovsk. un-t, 1963, 53-56

TOPIC TAGS: Gamma ray dosimetry, x ray dosimetry, scintillation detector, plastic scintillator

TRANSLATION: The possibility is considered of using detectors, consisting of a scintillating plastic to which finely dispersed zinc sulfide activated with silver is added, for the dosimetry of γ and x-rays. An experimental study was made of the dependence of

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L 31836-65
ACCESSION NR: AR5005653

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the "hardness variation" of such dosimeters on different parameters. The "hardness variation" was checked with an x-ray installation of the type RUM-3, and also by measuring a specified dose intensity from a Co^{60} source. In the measurements, account was taken of the influence of x-rays and γ rays on the detector photomultiplier. Measurements of the "hardness variation" were made with detectors consisting of a scintillating plastic using zinc sulfide in a concentration interval 1:50--1:300. The dependences of the relative efficiencies of these detectors on the effective x-ray energy were obtained in the interval 56--140 keV, and also on the γ-ray energy with $E \sim 1.25$ MeV. The curves were interpolated in the intermediate region. Cylindrical detectors 5 mm high and 30 mm in diameter were used in the measurements. The results of the investigations have shown that the dependence of the "hardness variation" on the height of the detector is very weak. It is found that the optimal concentration of zinc sulfide, ensuring a minimum "hardness variation," is 1:230. In this case the "hardness variation" does not exceed $\pm$6% in

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L 31836-65

ACCESSION NR: AR5005653

the interval from 50 keV to 1.25 MeV. L. Sokolov.

SUB CODE: NP, OP ENCL: 00

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L 43130-65 EWG(j)/EWT(l)/EWT(m)/EPF(c)/EWP(j)/EWA(h)/EWA(c)/EWA(l) Pc-4/Pr-4/
ACCESSION NR: AR5008438 Peb RM S/0081/65/000/003/S061/S061

32
B

SOURCE: Ref. zh. Khimiya, Abs. 3S356

AUTHOR: Shimanskaya, N. P.; Bezuglyy, V. D.

TITLE: Use of a polarographic method in studies of some properties of plastic scintillators

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy. Vyp. 3. Khar'kov, Khar'kovsk. un-t, 1963, 63-71

TOPIC TAGS: plastic scintillator, electrochemical property, optical property, polarographic analysis, scintillator aging, polystyrene analysis

TRANSLATION: The authors evolved a procedure for the polarographic analysis of plastic scintillators. This enabled them to define the electrochemical properties of a number of derivatives of oxadiazole-1,3,4 and oxazole-1,3, as well as the correlation between the electrochemical and optical properties of these materials. Measurements were made on an LP-55 polarograph with a reflecting galvanometer (sensitivity 2.7×10^{9} a/mm). A quantitative analysis of peroxide com-

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L 43130-65
ACCESSION NR: AR5008438

pounds in polystyrene was carried out polarographically, making possible a study of aging in plastic scintillators. Studied was the stability of luminescent additives under the influence of temperature and exposure to radiation or ultraviolet illumination. Experimental results are cited and evaluated. M. Lyubirskiy.

SUB CODE: MT, OP ENCL: 00

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L 39377-65 EWA(h)/EWG(j)/EWP(j)/EWT(m)/EWA(1) Pc-4/Peb RM

ACCESSION NR: AR5004843 S/0058/64/000/011/A034/A034

20
19
B

SOURCE: Ref. zh. Fizika, Abs. 11A339

AUTHORS: Bezuglyy, V. D.; Grachev, N. M.; Petrova, I. B.

TITLE: High-efficiency plastic scintillators 15

CITED SOURCE: Sb. Stsintillyatory i stsintillyats, materialy. Vyp. 3. Khar'kov, Khar'kovsk. un-t, 1963, 80-84

TOPIC TAGS: plastic scintillator, organic scintillator, scintillation efficiency

TRANSLATION: In order to obtain more effective plastic scintillators (PS), the polymer base was chosen to be 2.4-dimethyl styrene (vinyl xylol), which forms a polymer with aromatic rings. PS samples with vinyl xylol as a base were prepared by block thermopolymerization in glass ampoules at 170 ± 5° for 65 hours. The con-

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L 39377-65

ACCESSION NR: AR5004843

tents of the residual monomer in the PS was approximately 2%. The scintillation efficiency (SE) was estimated from the photocurrent of an FEU-19 photomultiplier. The tested samples had a cylindrical form 18 x 13 mm. The luminescent additives introduced were PPP, POPOP, PPO, and others. It was established that the optimal concentration of PP is 2%, POPOP -- 0.05 to 0.6% (of the monomer weight) for PS with height 15--20 mm. Compared with polystyrene PS, the SE is 140--145%. The largest SE, 155--160%, was possessed by PS made of a monomer with 1% PPO added. L. Kotlyarevskaya.

SUB CODE: OP, OC ENCL: 00

Card 2/2 mb

L 31834-65 EWG(j)/EWA(h)/EWP(j)/EWT(m)/EWA(l) Pc-4/Peb RM

ACCESSION NR: AR5005651 S/0058/64/000/012/A039/A039

SOURCE: Ref. zh. Fizika, Abs. 12A361

AUTHORS: Nagornaya, L. L.; Bezuglyy, V. D.; Vlasov, V. G.

TITLE: Investigation of the stability of plastic scintillators based on polystyrene

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy. Vyp. 3. Khar'kov, Khar'kovsk. un-t, 1963, 85-90

TOPIC TAGS: plastic scintillator, scintillation efficiency, scintillator aging, polystyrene, organic scintillator

TRANSLATION: The authors investigated the effect produced on aging of plastic scintillators (PS) by different factors, such as the temperature, humidity, natural elimination, etc. In addition, in order to develop optimal technological conditions for the manufac-

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L 31834-65

ACCESSION NR: AR5005651

ture of PS, a study was made of the stability of PS in time. The PS were prepared by polymerization of styrene with additives of PPP (2%) and POPOP (0.06%) at T = 200, 170, 140, 125° and durations (t) of 100, 70, 50, 32, 24, 16, and 8 hours. Standard samples 18 mm in diameter and 15 mm high were tested. The relative scintillation efficiency was determined from the average photocurrent in an FEU-29 photomultiplier irradiated by a radioactive source Ag^{110}. After plotting the indices, the samples were stored under different conditions: without exposure to light at T = 0, 20--25, ~ 40, 60--70°, natural elimination at T = 70°, and also at increased humidity. The observations were carried out for 1.5--2.5 years, with the sample inspected visually and measured every six months. It was established that it is necessary to ensure minimum content of the residual monomer in the PS. The best PS were those manufactured at T = 170--180° and t = 32 hours, for blocks 20 mm in diameter (t increases with increasing dimensions). The scintillation efficiency during 2.5 years, in the absence of light, at T = 20--40°, and also under con-

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L 31834-65
ACCESSION NR: AR5005651

ditions of increased humidity, was 85%. It is impossible to subject PS to multiple abrupt temperature fluctuations (RZhKhim, 1964, 38378). L. Kotlyarevskaya.

SUB CODE: GP, OC ENCL: 00

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L 26481-65 EWG(j)/EWT(m)/EPF(c)/T/EWP(j)/EWA(1)/EWA(c)/EWA(h) Pc-4/Pr-4/Peb RM
ACCESSION NR: AR5004852 S/0058/64/000/011/D050/D050

30
25
8

SOURCE: Ref. zh. Fizika, Abs. 11D387

AUTHORS: Nagornaya, L. L.; Bezuglyy, V. D.

TITLE: Investigation of photoluminescence and scintillation properties of some organic compounds with conjugated bonds in solid plastic solutions

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy. Vyp. 3. Khar'kov, Khar'kovsk. un-t, 1963, 91-98

TOPIC TAGS: photoluminescence, scintillation property, organic scintillator, solid solution, plastic scintillator

TRANSLATION: The photoluminescence and scintillation properties were investigated of aryl derivatives of 1,2-ethylene, oxazole -- 1,3; oxadiazole -- 1, 3, 4, and also phenanthryl derivatives of oxadiazole and anthryl derivatives of ethylene. It is shown that the greatest increase in the quantum yield of photoluminescence is observed when the conjugation chain is increased by introducing additional

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L 26481-65
ACCESSION NR: AR5004852

phenyl rings into the n-position; on the other hand, compounds with such residues as phenanthryl and anthryl have much lower quantum yield than the corresponding diphenyl derivative. The effect of the viscosity of the medium on the photoluminescence indices of some ethylene derivatives is demonstrated; it is established that the increase in viscosity of the medium leads to an increase in the quantum yield of the compounds with open conjugated chain, and hypotheses explaining these phenomena are advanced.

SUB CODE: OP ENCL: 00

Card 2/2

ALEKSEYEVA, T.A.; BEZUGLYY, V.D.; DMITRIYEVA, V.N.; ZUBKOVA, V.S.

Polymerization kinetics of 2-methyl-5vinylpyridine studied by the polarographic method. Vysokom.soed. 5 no.9:1382-1387 S '63. (MIRA 17:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintillyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv.

BEZUGLYY, V.D.; DMITRIYEVA, V.N.; PREOBRAZHENSKAYA, Ye.A.

Polarographic study of p-nitrodiphenyl. Zhur. anal. khim. 18 no.1:126-130 Ja '63. (MIRA 16:4)

1. All-Union Scientific-Research Institute of Monocrystals, Scintillating Materials and Highly Pure Chemical Substances, Kharkov.

(Biphenyl) (Polarography)

S/075/63/018/003/004/006
E071/E436

AUTHORS: ~~Bezuglyy, V.D.~~, Dmitriyeva, V.N., Mel'nik, L.A. Preobrazhenskaya, Ye.A., Shkodina, I.A., Mil'ner, R.S. Dovgosheya, M.I., Dykhanova, A.S.

TITLE: Polarographic control of the individual stages of the synthesis of some monomers

PERIODICAL: Zhurnal analiticheskoy khimii, v.18, no.3, 1963, 385-395

TEXT: A study was made of the polarographic behavior of 4-acetyl-diphenyl and its chloro-, fluoro-, hydroxy- and methoxy-4' derivatives as well as β-acetyltetralin (which are intermediate products in the synthesis of 4-vinyldiphenyl), its derivatives and β-vinyltetralin. A method was also developed of the polarographic determination of these compounds in reaction mixtures after acetylation, after reduction of acetylderivatives into corresponding carbinols and in industrial products. The method was checked on synthetic mixtures containing various proportions of the substances under examination with satisfactory results. Similarly, polarographic behavior of 4-diphenylaldehyde and 4-phenylcinnamic acid (intermediates in the synthesis of 4-vinyl-diphenyl) and 4-nitrodiphenyl (intermediate in the synthesis of

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halogen containing monomers of the vinyldiphenyl series) was studied. Methods of quantitative determination of these compounds in the reaction mixture were developed. All the methods were successfully used for the control of the synthesis of 4-vinyldiphenyl and β-vinyltetralin and their derivatives. There are 6 figures and 10 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintilllyatsionnykh materialov i osobo chistykh veshchestv, Khar'kov (All-Union Scientific Research Institute for Monocrystals, Scintillating Materials and Highly Pure Substances, Khar'kov)

SUBMITTED: May 7, 1962